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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,722	09/12/2003	John M. Koegler III	200315232-1	8307

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,722	KOEGLER ET AL.	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/28/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 16th, 2007 has been entered.

Information Disclosure Statement

2. The information disclosure statement filed March 28th, 2007 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 21, 22, 2, 3, 6, and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 21:

The subject matter that was not described is "at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features." This subject matter does not appear to be described anywhere in the specification at the time the application was filed.

It is not completely clear what this means: see the 35 U.S.C. 112, second paragraph, rejection that follows. For the purposes of this rejection, the Examiner has interpreted this language to mean that the respective features begin and end at the same angle. In other words, "the same angular position" means "identical angular positions." Alternatively, this language could also be interpreted to mean that the features are a different angular size but at least centered at the same angular position.

As an example of "the same angular position," see, for example, Fig. 6 of Maenza (US 5,602,388), reproduced here for convenience:

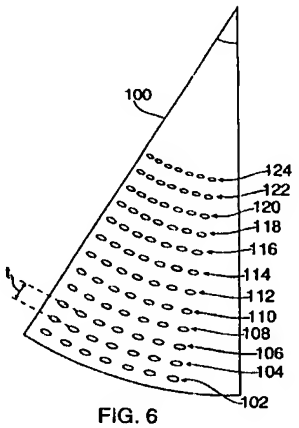

FIG. 6

In the specification, Fig. 1 does depict the disk speed features and angular orientation features as having overlapping angular positions. The disk orientation feature 116, for example, overlaps two of the disk speed features. The angular position of the disk orientation feature 118 is encompassed by the angular position of the disk speed feature adjacent to it.

However, this figure appears to depict offset or overlapping angular positions, rather than identical or "the same" angular positions.

Regarding claim 22:

It contains language similar to claim 21.

Regarding claims 2, 3, 6, and 7:

They are dependent on either claim 21 or 22.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 21, 22, 2, 3, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding these claims:

The subject matter that is indefinite is "at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features."

It is not clear what is being claimed. For the previous 35 U.S.C. 112, first paragraph, rejection, the Examiner assumed Applicant was attempting to claim the

situation where the disk speed features and the disk angular orientation features had identical angular positions: this appears to be the most reasonable interpretation of the claim language.

However, Applicant may be attempting to claim the situation depicted in Fig. 1 of the specification. In this case, the claim is indefinite because the claim language appears to imply identical angular positions, whereas the subject matter Applicant regards as their invention is really overlapping angular positions: some portion of a disk speed feature and some portion of an angular orientation feature have the same angular position, but the two features do not have the same angular position.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 4, 5, 8, 9, 11-16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda (US 2002/0191517) in view of Nakamura et al. (US 4,929,822).

Regarding claim 1:

Honda discloses:

An optical disk drive (Fig. 6), comprising:

a spindle motor to turn an optical disk (45);

an OPU to apply an image to a coating within a label region of the optical disk (66).

Honda does not disclose:

"an encoder, configured to track a plurality of substantially identical disk speed features arranged in an annular ring on the optical disk in a region distinct from the label region and to thereby obtain disk speed data, the disk speed data ascertainable without tracking any other feature on the optical disk, wherein an angular span of each of the disk speed features is substantially identical to an angular span between each two of the disk speed features."

However, note that Honda does disclose that it is necessary to monitor and control the rotating speed of the disk (paragraph 37). Honda discloses that a pulse signal is generated for each turning angle. Honda does not disclose how that pulse signal is generated.

Nakamura discloses a means for measuring the rotating speed of a disk (Fig. 13). Nakamura discloses an encoder (column 5, lines 60-65), configured to track a plurality of substantially identical disk speed features arranged in annular ring on the optical disk (visible in Fig. 13) and to thereby obtain disk speed data (abstract), the disk speed data ascertainable without tracking any other feature on the optical disk, wherein an angular span of each of the disk speed features is substantially identical to an angular span between each two of the disk speed features (apparent from Fig. 13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda an encoder, configured to track a plurality of substantially

identical disk speed features arranged in an annular ring on the optical disk in a region distinct from the label region (discussed below) and to thereby obtain disk speed data, the disk speed data ascertainable without tracking any other feature on the optical disk, wherein an angular span of each of the disk speed features is substantially identical to an angular span between each two of the disk speed features.

The motivation would have been to accurately detect the rotation of the disk (Nakamura, column 1, lines 45-55).

As for the requirement that the annular ring be in a region distinct from the label region: this is obvious because printing the label will change the reflectivity of the disc. Since the speed measurement depends on the reflected signal, it's obvious to have the two in distinct areas so that the label doesn't interfere with the signal used to track the speed.

Regarding claim 4:

Honda in view of Nakamura discloses a control procedure to coordinate disk speed data from the encoder with the OPU during application of the image (Nakamura produces a pulse signal: for example, Fig. 6. Honda discloses coordinating the pulse signal with the optical pickup in paragraph 37).

Regarding claim 5:

Honda in view of Nakamura discloses:

A processor-readable medium comprising processor-executable instructions for labeling an optical disk (Honda Fig. 6 shows the system is controlled by a processor-

readable medium containing processor-executable instructions), the processor-executable instructions comprising instructions for:

controlling a spindle motor within an optical disk drive to regulate angular speed of the optical disk (Honda: paragraph 37);

interpreting output signals of an encoder resulting from sensation of a plurality of substantially identical disk speed features defined on the optical disk as the optical disk is spun by the spindle motor to produce disk speed data, each of the disk speed features spaced apart in an annular ring on the optical disk from two other disk speed features by a substantially equal gap having an angular span substantially equal to an angular span of each of the disk speed features (taught by Nakamura as discussed above); and

marking a coating on the optical disk with an OPUS; wherein the OPU is operated according to the disk speed data (Honda: paragraphs 37-38).

Regarding claim 8:

In Honda in view of Nakamura the controlling comprises instructions for processing the disk speed data to determine times when the speed of the spindle motor should be increased and times when the speed of the spindle motor should be decreased to maintain desired speed (Honda paragraph 37: "a spindle servo circuit controls...the spindle motor so as to rotate constantly at a rotating speed").

Regarding claim 9:

In Honda in view of Nakamura the interpreting comprises instructions for distinguishing between a first and a second signal received from the encoder, wherein

the first and second signal result from differences in light reflection correspond to the presence or absence of the disk speed features (taught by Nakamura).

Regarding claim 11:

In Honda in view of Nakamura the interpreting comprises instructions for distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface and wherein the second signal results when light is reflected by a molded pit (Nakamura: column 5, lines 40-50; column 11, lines 30-55).

Regarding claim 12:

In Honda in view of Nakamura the interpreting comprises instructions for distinguishing between the output signals, wherein the output signals are associated with levels of light reflectivity within a region defined on a mirror surface adjacent to the coating on the label side of the disk (all elements here have been previous discussed).

Regarding claims 13, 16, 17, 19, and 20:

All elements positively recited have been identified with respect to previous claims. No further elaboration is necessary.

Regarding claim 14:

Honda in view of Nakamura discloses an optical disk drive as discussed above.

Honda in view of Nakamura does not disclose means for tracking, with an OPU, disk angular orientation data defined by disk angular orientation features; and

means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk.

Nakamura discloses means for tracking, with an OPU, disk angular orientation data defined by disk angular orientation features (Nakamura: column 7, line 65 to column 8, line 10).

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Nakamura means for tracking, with an OPU, disk angular orientation data defined by disk angular orientation features (taught by Nakamura); and means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk (already implied by Honda paragraph 38).

The motivation would have been to print an image having a desired orientation to a reference position (this motivation is already present in Honda paragraph 38, but Honda itself did not disclose means to accomplish it).

Regarding claim 15:

It is similar to claim 14 except it recites tracking with an encoder instead of an OPU. Since the encoder taught by Nakamura is itself an optical pickup, this claim is similarly rejected.

9. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Nakamura as applied to the claims above, and further in view of Nagashima (US 5,670,947).

Regarding claim 10:

Honda in view of Nakamura discloses a processor-readable medium as discussed above.

Honda in view of Nakamura discloses distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface (discussed above).

Honda in view of Nakamura does not disclose that the second signal results when light is reflected by a saw tooth feature (instead, Honda in view of Nakamura discloses that the second signal results from a molded pit).

Nagashima discloses that a sawtooth feature prevents directly reflected light from being incident on a light receiving device (column 3, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda in view of Nakamura wherein the second signal results when light is reflected by a saw tooth feature, as taught by Negashima, because a saw-tooth feature and a pit are used in the same environment, for the same purpose, and achieve the same result (Negashima does not use the sawtooth feature in an optical disc drive, but the principle is the same: both the pit and the sawtooth feature are deformations in the surface intended to keep light from reflecting back to a photodetector, and such variations would be well known to one of ordinary skill in the field of optics).

Regarding claim 18:

It is similar to claim 10 and similarly rejected.

10. Claims 21, 2, 22, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein (US 6,145,368).

Regarding claim 21:

Honda discloses:

An optical disk drive (Fig. 6), comprising:

a spindle motor to turn an optical disk (Fig. 6: 56);

an OPU to apply an image to a coating within a label region of the optical disk (Fig. 6: 67).

Honda does not disclose:

an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the disk angular orientation features different from the disk speed features, and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features.

However, Honda does disclose tracking the disk speed (paragraph 37) and angular orientation (paragraph 38).

Klein discloses:

an encoder (the encoder is shown in Fig. 1A, but the specific embodiment relied upon is that of Fig. 2) configured to track substantially identical disk speed features in a first annular ring at a first radial position on a disk (Fig. 2: 104) so as to thereby obtain disk speed data (column 1, lines 25-45), the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular

ring at a second radial position on the optical disk (Fig. 2: 102) so as to thereby obtain angular orientation data (column 1, lines 24-45), the disk angular orientation features different from the disk speed features (apparent from Fig. 2), and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features (apparent from Fig. 2).

It would have been obvious to one of ordinary skill in the art to include in Honda an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the disk angular orientation features different from the disk speed features, and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features.

The motivation would be to measure the disk speed and angle directly from the disk itself, improving measurement accuracy.

Regarding claim 2:

In Honda in view of Klein the encoder is additionally configured to track the disk angular orientation features, the disk angular orientation features molded within the region distinct from the label region (the two light emitting and light receiving devices taught by Klein Fig. 1 together constitute "the encoder").

Regarding claim 22:

This claim is similar to claim 21 except it is a claim to a processor-readable medium. Honda discloses a processor-readable medium (required by the system controller and/or host computer of Fig. 6). All other elements of this claim have already been identified in earlier rejections.

Regarding claim 7:

This claim is similar to claim 2 and similarly rejected.

11. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein as applied to claim 21 above, and further in view of Osborne (US 5,107,107).

Regarding claim 3:

Honda in view of Klein discloses an optical disk drive as discussed above.

Honda in view of Klein does not disclose wherein the OPU is additionally configured to track the disk angular orientation features, the disk angular orientation features defined within the label region.

In Honda in view of Klein, light from an encoder passes through slits in a disk and is measured on the other side. This is a transmissive scheme.

Osborne discloses that a reflective scheme may be used in place of a transmissive scheme (column 6, lines 1-10). Osborne discloses that an encoder may still be used with this scheme, but that the light source of an optical disk drive (an OPU) is superior (column 11, lines 25-60).

Therefore it would be obvious to one of ordinary skill in the art to include in Honda in view of Klein wherein the OPU is additionally configured to track the disk

angular orientation features, the disk angular orientation features defined within the label region.

The motivation would be to use the OPU to track the disk angular orientation features instead of a conventional encoder: Osborne discloses that using an OPU overcomes the weaknesses of a conventional encoder.

Regarding claim 6:

This is similar to claim 3 and is similarly rejected.

Response to Arguments

12. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Bricot et al. (US 4,556,966) discloses that it is better to have a disk with a tracking pattern directly on it than to measure speed and rotation the standard way. Ohtomo et al. (US 6,093,928) discloses disk angular orientation features in a second annular ring.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 6:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 4/26/07

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